Michigan Department of Community Health
Comprehensive Diabetes Control Program

Introduction

Diabetes results not only in death, but in significant suffering from complications of the disease including blindness, kidney failure, and lower extremity amputation. Prevalence rates, death rates, and rates of complications associated with diabetes have been increasing steadily in Michigan and in the nation over the last decade. Much of this rise is likely due to an increasingly older, more sedentary, and progressively overweight population. Michigan average data for the three years from 1999-01 indicate that 485,000 adults and 6,200 persons under the age of 18 have been told by a physician that they have diabetes. In 2000, the direct expenditures of diabetes related medical care in Michigan exceeded $2.9 billion, with 60 percent attributable to hospitalization. Diabetes costs Michigan residents an additional $3.5 billion a year in lost productivity due to premature death, disability, and illness. This includes the treatment of end stage renal diseases through costly procedures such as dialysis or kidney transplantation. It is estimated that at least half of the new cases of diabetes related kidney failure and lower extremity amputations could be prevented each year through targeted preventive efforts. Complications such as blindness could also be delayed or prevented through strategies such as annual dilated eye exams. Early detection, improved delivery of care, and better education on diabetes self management can help ease the burden of diabetes.

Program

The Michigan Diabetes Control Program began in 1982 with a small grant from the Centers for Disease Control and Prevention (CDC) and the Michigan Legislature. In 1994, the program received a significant boost after being awarded a CDC comprehensive grant and receiving funds from the new state tobacco tax revenues. Subsequent increases in state and federal funding have continued to enable the program to expand its reach across the state and comprehensively address diabetes using a variety of strategies. In 1995, Michigan completed it establishment of a statewide network of six regional **Diabetes Outreach Networks (DON)**. The DONs service the entire state and have been in place since 1995 providing diabetes related consumer activities, professional education to health care providers and agencies, and advocacy initiatives. The DON mission is to increase innovative partnerships to strengthen diabetes prevention, detection, and treatment throughout Michigan. This is accomplished by:

a) Promotion of quality diabetes care by working with health care providers and agencies through the state Diabetes Care Improvement Project. This project provides clinical care guidelines; professional education; consultation, guidance and assistance; and a statewide data system that tracks clients on intake and follow-up. The current DON data base includes information on over 30,000 clients (intake data) and 19,000 clients (follow-up data) from 165 agencies (home care, state certified programs, physicians offices, community health centers, etc.). It measures changes in clinical indicators such as the completion of an annual HgA1c (glycosylated hemoglobin), dilated eye exams and foot exams. It also measures behavioral and life style changes such as

exercise, nutrition management, and smoking cessation. DON data reports are provided to the agency on a quarterly basis and provide information on demographic trends and client outcomes and serve as the basis for quality improvement.

b) Regional collaboration through DON advisory councils includes diverse representation of health care providers, professionals, and consumers as well as participation in a variety of consumer activities. These partnerships build general awareness, improve adherence to quality standards, and provide information on a range of services for people with diabetes.

Implementation

a. The Michigan Diabetes Core Measures Initiative was a funded collaborative effort between the Michigan Diabetes Control Program and the Michigan Association of Health Plans which represents all the managed care plans in Michigan. Core Measures are aspects of care that all patients should expect to receive from their health care providers. They are evidence-based and reflect the American Diabetes Association Clinical Practice Recommendations. The Michigan core measures include a physical exam including foot and blood pressure check at least two times a year, hemoglobin A1c test at least every 12 months, dilated eye exam yearly, lipid profile yearly, micro albumin test yearly, and advice to quit smoking. In Michigan approximately 60 percent of people with diabetes are covered in managed care.

b. The Michigan Diabetes Control Program (DCP) promotes and collaborates with national programs such as the National Diabetes Education Program (NDEP). The NDEP aims to change the way diabetes is treated by the media, public, and health care systems. The NDEP program offers diabetes awareness messages which address racial and ethnic disparities, obesity trends, aging trends, type 2 diabetes in children, and many other topics. The CDC Flu and Pneumococcal Immunization campaign has been successfully promoted in Michigan. In 2000-01 over 20,000 materials were distributed statewide to over 400 organizations. Recent data from the BRFSS system indicates that there is a trend upward in the numbers of people with diabetes who had a flu and pneumococcal immunization.

c. The Michigan DCP has worked with underserved populations to reduce disparate health burdens. These efforts include:

1) The Wayne State University Morris J. Hood Comprehensive Diabetes Center has a faith-based initiative in greater metro Detroit that in FY 00-01 enrolled 29 faith-based organizations to offer a three month diabetes self-management and behavioral change program to those with diabetes and those at risk for diabetes. Over 600 people were enrolled in this program.

2) The Henry Ford Health System African American Initiative (AIM^{HI}) seeks to work primarily with African American males at high risk for diabetes, stroke and hypertension. It provides follow-up medical care based on outcomes of screening clinics and provides diabetes self management education to those with diabetes. In FY 00-01 screenings were provided to 2,500 people and follow-up provided to 521 of the people who were screened with abnormal results for high glucose levels and high blood pressure readings.

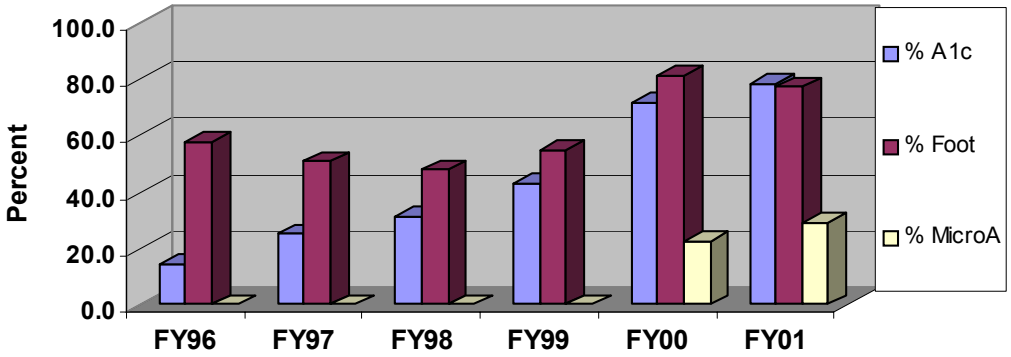
3) The National Kidney Foundation of Michigan targeted African Americans, Hispanics, and Native Americans in a public education campaign to raise consumer awareness about diabetes and kidney disease. Over 22,000 minorities were reached in this campaign.

d. The Michigan DCP has worked to improve public policy for people with diabetes. The Michigan Diabetes Cost Reduction Acts (DCRA), Public Act 424 Section 416 (b) and Public Act 425 Section 3406p, were implemented March 28, 2001. The law requires that state regulated health insurance and managed care policies cover necessary diabetes supplies and equipment (blood glucose meters, strips, lancet devices), medication (oral medication and insulin) and self management education necessary for a person with diabetes. By assisting people to obtain the necessary diabetes supplies and services, the DCRA will help prevent the serious complications of diabetes like amputations, blindness, and kidney failure.

Data

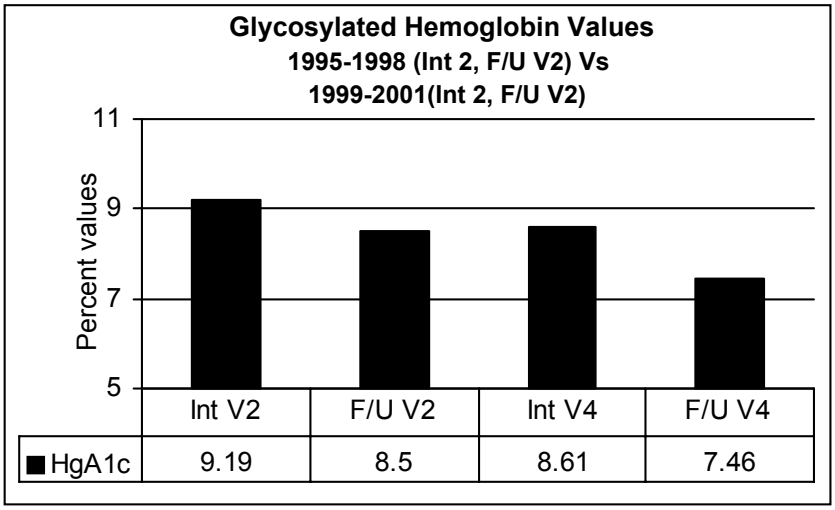
Results from the Michigan DON demonstrate that working with health care agencies and providers through a state wide Diabetes Care Improvement Project, can result in improved outcomes for persons with diabetes. Trends in follow-up data from FY 1996 through FY 2001 for glycosylated hemogloblin, foot exam, and microalbuminuria (all done at least once annually) show a significant improvement in number of persons with diabetes having these tests done. Glycosylated hemoglobin tests increased from 14 percent in FY 1996 to 78 percent in FY 2001 and foot exams done increased from 58 percent in FY 1996 to FY 77 percent in 2001. (Figure 1) Microalbuminuria tests were added to the data system in FY 2000 and also show an increase from 22 percent to 28 percent in number of persons having the test between FY 2000 and FY 2001.

Figure 1 - Follow-up Trends



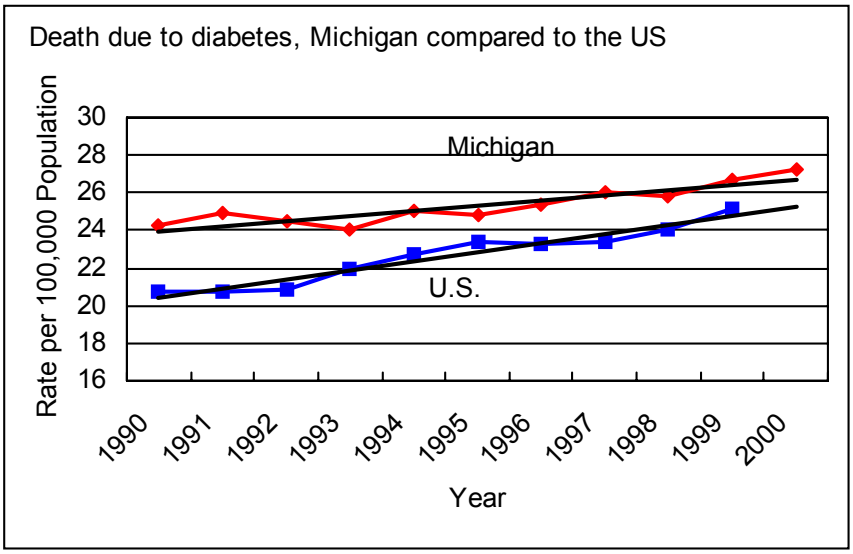
Individualized data analysis from the regional DONs also shows a positive downward trend in the levels of glycosylated hemoglobin. Between 1995-97 there was a decrease in the glycosylated hemoglobin values of 0.69 percent (N = 9,617 intakes and 4,749 follow-ups). Between 1999-01 there was a decrease value of 1.15 percent (N=10,982 and 3,158 follow-ups). According to the United Kingdom Prospective Diabetes Study for every percentage point decrease in HbA1c (e.g. 9 to 8 percent), there was a 35 percent reduction in the risk of micro vascular complications. (ADA, Clinical Practice Recommendations, 2002). (Figure 2)

Figure 2 - Values



These results have helped to close the gap in Michigan's excess diabetes related mortality compared to national averages. While Michigan's diabetes mortality rate still exceeds the nation, the gap has been reduced since the initiation of the Michigan's diabetes control efforts. (Figure 3)

Figure 3 - Michigan Statistics



Individual studies from the DON networks have also indicated regional reductions in diabetes related hospitalizations, amputations and mortality. What is most impressive is the relatively short duration of the program and the degree of improvement already achieved.

Summary

The Michigan Diabetes Control Program has made great strides in addressing the burden of diabetes. Keys to success include:

1. a strong regional network;
2. a statewide data system with follow-up and feedback;
3. aggressive collaboration with managed care, advocacy groups, state certified programs, health insurers and managed care as well as many others; and
4. a mix of funding and program resource support from state and federal agencies.